very carefully several clumps in order to investigate this, but in each case they separated readily into two distinct plants, the normal form being on one rootstock, and the variety on the other.

My object in publishing this note is to show that there is every presumption in favor of believing that the form has persisted in maintaining its character for more than twenty-five years, long enough surely to justify recognizing it as a permanent variation from the normal character of the species.

It is not so easy, however, to account for the variation, as there is absolutely nothing in the plant's environments to suggest an explanation, both forms being closely intermingled, and therefore exposed to precisely the same conditions; probably at least one half of the whole patch showing bifid and crested apices to the fronds and pinnae.

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## NEW STATION FOR THE DWARF MISTLETOE.

J. C. ARTHUR.

THE remarkable number of recent coincident finds of the dwarf mistletoe (*Arceuthobium pusillum* Peck) reported in the January RHODORA of this year, makes the discovery of another New England station in itself of small moment. It was my good fortune this past summer, however, to chance upon a more luxuriant and abundant development of the plants than any so far recorded. It was while spending some weeks at Isle au Haut, Maine, that I came one day upon a portion of forest along the shore, of a few acres in extent, composed almost entirely of white and black spruces in about equal proportion, which presented an exceedingly novel and almost fantastic appearance. The general effect was that of an abandoned Italian garden, with its once compact and well clipped forms, now ragged and partly dead. Here and there witches' brooms of characteristic form, from a foot to three feet in diameter, were prominent, but it was the transformation of whole trees from the smallest size to thirty or forty feet in height into solid individual "brooms" that produced the strangest effect. Trees ten to fifteen feet high and of two-thirds that diameter were most numerous, and were formed of a close growth of slender branches from the ground to the rounded summit, the usual pyramidal form being entirely lost.

The mistletoe was not equally in evidence on all trees showing equal transformation. On some it was produced sparingly, but on others it stood so high and thick on the branches as to hide the leaves and give a brown look even at some distance, the general effect being softened, however, by the green of the youngest twigs. The foliage of affected trees was usually of a paler and more yellowish green than the normal, but the comparatively few dead and dying trees showed that the mistletoe, although exhausting, was not so destructive a parasite as one would fancy.

Isle au Haut is about the outermost island at the mouth of Penobscot bay, and fifteen to twenty-five miles from the mainland, although many small islands with spruce trees intervene. The locality here described is at Douglas (locally called Rich's) cove, on the east side of the island looking toward the open ocean. The island, which is about six miles long and about half as wide, is well wooded throughout, chiefly with spruces and birches, and rises along the central line to over five hundred feet elevation, making the whole island into a miniature mountain range rising from the sea. The fogs roll in from the open ocean and envelop the eastern slope at all seasons, but excepting in severe weather they are intercepted by the central summits and burned off before reaching the western shore, thus making a decided difference in the atmospheric humidity of the eastern and western slopes. To this difference in humidity, as suggested by Dr. von Schrenk, I am inclined to ascribe the fact that in my subsequent search, while I was able to find the mistletoe on the western slope of the island, it was never in sufficient luxuriance to cause witches' brooms or even noticeable fasciation of the branches. On the eastern slope only one area was found in which the majority of the trees were affected, but outside this area witches' brooms of conspicuous size were not uncommon.

I probably found more of the white spruce (*Picea Canadensis* B. S. P.=*P. alba* Link) affected than of the black spruce (*P. Mariana* B. S. P.=*P. nigra* Link), but I could see no indication of discrimination by the parasite. I was more especially impressed with this observation, as the two spruces are similarly affected by climatic conditions, and have much darker foliage than when growing inland, in large part being of the same deep blue-green as the balsam fir (*Abies balsamea* Mill.), altogether making it difficult to distinguish them from each other except by a close scrutiny of the youngest twigs to detect

the presence or absence of pubescence. And furthermore, throughout the island the black spruce is attacked by a species of *Peridermium*, which forms large compact witches' brooms that are very conspicuous on account of their pale yellow color, and yet the white spruce is never affected by the fungus. Why the fungous parasite should discriminate between two host species resembling each other so closely in every prominent character, while the spermophytic parasite does not, seems a curious matter, beyond explanation.

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## ABNORMAL FLOWERS IN LEONURUS CARDIACA.

C. H. BISSELL.

LAST summer, in looking over a colony of the common "Motherwort," growing by the roadside, I noticed several plants of unusual appearance. Examination showed that the peculiar aspect of these plants was due to a variation in the flowers, and that these presented an interesting transformation by which the stamens are changed to leaves (phyllody) and the corolla becomes less irregular (peloria). Both the form and color of the corolla were abnormal. In place of the usual arched upper lip, capped by a conspicuous tuft of white wool, was a shorter, entire, somewhat lanceolate lobe. The lower lip was also smaller than usual and provided with pointed lateral lobes. The color was paler than usual and had a greenish tint. The most conspicuous variation, however, was in the anthers, these being changed into leaf-like, green appendages.

In looking up the literature of this species with special reference to its teratology, I find several anomalies described, but none which exactly covers this case. For instance, Freyhold[1] states that small leafy tufts are sometimes formed between the calyx and corolla in this species, although he does not record a change in the stamens. A case of peloria in *L. Cardiaca*, L., has been described by J. Peyritsch,[2] and illustrated by plate. His figures show a calyx with six unequal teeth, a corolla with six short, rounded equal lobes and six stamens with perfect anthers. Peloria is shown only in the upper flowers of his plant, the lower being of the usual form.

[1] Freyhold, Beiträge zur Pelorienkunde, 3–14; Strasburg, 1875.

[2] Denkschr. der k. k. Acad. der Wissensch. (Mathem. Cl.) xxxviii. Abt. 2, 134–148, t. 5; Vienna, 1878.